**Atomic and Ionic Radii**

**1)** Explain the difference between the radii of the K atom and the K+ ion.

**2)** **Discuss the data for the following**



**3) Justify why** a chloride ion, Cl–, is larger than a chlorine atom, Cl, whereas a sodium ion, Na+, is smaller than a sodium atom, Na.

**4)** Match the atoms and ions in the table below to the given radii **Radii:** 77 pm 123 pm 128 pm Justify your answer.



**5)** State which has the larger radius, Al or Al3+ . Justify your answer.

**6)** Match the atoms and ions in the table below to the radii given.

**Radii** 99 pm 137 pm 197 pm Justify your answer.



**7) Account for the difference in** atomic or ionic properties given in the table below

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**8)** Place the following species in order of increasing size: H, H+, H–. Justify

**9)** A bromine atom, Br, has more electrons than a scandium atom, Sc, but its radius is smaller. Explain.

**10)** Explain the difference between the radii of the following species.

**i)** K atom and K+ ion

**ii)** P atom and P3– ion

**11)** Compare the relative sizes of the Ca2+ and Cl– ions, and explain the difference in their radii.

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